

In the Claims

The following Listing of Claims replaces all prior versions in the application:

LISTING OF CLAIMS

1. (Currently amended) A power supply system comprising:
 - a DC power supply apparatus;
 - a load device which is connected to ~~an output side of the said~~ DC power supply apparatus;
 - a charging path which connected to said DC power supply apparatus in parallel with said load device, said charging path including
 - a lithium ion battery ~~for backup~~ that is connected to ~~the output side of~~ said DC power supply apparatus in parallel with said load device;
 - ~~a charging path which is connected in series to the lithium ion battery;~~
 - a charging current limiting circuit, which is provided with a charging current control element, that is connected in series with said lithium ion battery and supplies a charging current of an arbitrary value independent of load fluctuations in ~~the said~~ charging path of the lithium ion battery; and
 - a switch that is provided with such function that disconnects said lithium ion battery from both of said DC power supply apparatus ~~or and~~ said load device when the cell voltage of said lithium ion battery shows overcharging or over-discharging of said lithium ion batter, or connects said lithium ion battery to both of said DC power supply apparatus ~~or and~~ said load device ~~and that connects said lithium ion battery to said DC power supply apparatus or said load device~~ in a normal state; and
 - a control circuit that monitors the voltage value of said charging path, performs a reference voltage value ~~setting~~ used for setting the charging current of ~~an said~~ arbitrary value in said charging current limiting circuit, and controls said switch when said voltage of said charging path exceeds a specified voltage value during charging.
2. (Original) The power supply system in accordance with claim 1, wherein a plurality of said lithium ion batters are connected in series, and

said power supply system is further provided with a voltage regulation circuit that is connected in parallel with each lithium ion battery of said plurality of series-connected lithium ion batteries, detects a full-charge voltage in each of said lithium ion batteries and bypasses said charging current.

3. (Currently amended) A power supply system comprising:

a DC power supply apparatus;

a load device which is connected to ~~an output side of the~~said DC power supply apparatus;

a charging path which connected to said DC power supply apparatus in parallel with said load device, said charging path including

a plurality of series-connected lithium ion batteries that are connected to ~~the output side of~~said DC power supply apparatus in parallel with said load device;

a charging current limiting circuit, which is provided with a charging current control element, that is connected in series with said plurality of lithium ion batteries and that supplies a charging current of an arbitrary value independent of load fluctuations in the charging path of said plurality of lithium ion batteries; and

a switch that is provided with such function that disconnects said plurality of lithium ion batteries from both of said DC power supply apparatus ~~or and~~ said load device, or connects said plurality of lithium ion batteries to both of said DC power supply apparatus ~~or and~~ said load device ~~and that connects said plurality of lithium ion batteries to said DC power supply apparatus or said load device~~ in a normal state;

a voltage regulation circuit, which is provided with a bypass current limiting element, that is connected in parallel with each lithium ion battery of said plurality of series-connected lithium ion batteries, detects a full-charge voltage in each lithium ion battery and bypasses said charging current; and

a control circuit that monitors the voltage value and current value of said charging path, sets a reference voltage used for setting the charging current of ~~an~~said arbitrary value in said charging current limiting circuit and performs a full-charge reference voltage setting in said voltage regulation circuit, and switches said switch when said voltage of said charging path exceeds a specified voltage value during charging.